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Background: Current evidence indicates that exercise therapy (ET) has a short and medium-term benefit for hip osteoarthritis (OA), but evidence is inconclusive regarding the effect of manual therapy (MT). The primary aim of this randomised controlled trial was to determine the effectiveness of ET with and without MT on clinical outcomes for individuals with hip OA. A secondary aim was to ascertain the effect of an 8-week waiting period on outcomes.
Methods: 131 men and women with hip OA recruited in four hospitals were initially randomised to one of three groups: ET (n = 45), a combination of ET and MT (n = 43) and wait-list control (n = 43). The two intervention groups underwent individualised ET or ET/MT for 8 weeks. Patients in the control group waited 8 weeks and were randomised to receive either ET or ET/MT after 9 week follow-up, and pooled with original treatment group data: ET (n = 66) and ET/ MT (n = 65). All participants were followed up at 9 and 18 weeks and the control group was reassessed at 27 weeks (18 weeks post-treatment) by the same blinded assessor. The primary outcome measure was the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). Other outcomes included sit-to-stand, 50-foot walk test, pain severity, hip range of motion (ROM), anxiety, depression, quality of life (QOL), analgesic usage, physical activity, patient-perceived change and patient satisfaction. Intention-to-treat analysis was performed to determine within-group change and between-group differences for the three groups at baseline and 9 weeks, and the two treatment groups at baseline, 9 and 18 weeks.
Results: Eight patients (6.1%) were lost to follow-up at 9 weeks and 19 (14.5%) were lost to follow-up by 18 weeks. Both ET (n = 66) and ET/MT groups (n = 65) showed significant within-group improvements in WOMAC, pain severity, sit-to-stand and HROM measures at 9 weeks, which were still evident at 18 weeks. There was no significant within-group change in anxiety, depression, QOL, analgesic usage, 50-foot walk test or physical activity. There was no significant difference between the two intervention groups for any of the outcomes.

Regarding the results of the original ET, ET/MT and control group allocation, there was a significant improvement in one or both ET and ET/MT groups compared with the control group in the same outcomes, as well as patient perceived improvement at 9 weeks. There was no significant difference between the three groups in analgesic usage, WOMAC stiffness subscale, sit-to-stand and 50 foot walk tests, QOL and physical activity. There was an overall deterioration in anxiety and depression scores.
Conclusions: The addition of MT to an 8 week programme of ET for hip OA resulted in similar improvements in pain, function and ROM at 9 and 18 weeks. The significant improvement which occurred in the same outcomes in the two treatment groups compared with a wait-list control of 8 weeks has implications for waiting list management
Disclosure statement: The authors have declared no conflicts of interest.

120. PREVALENCE AND INCIDENCE OF HIP OSTEOARTHRITIS IDENTIFIED FROM DUAL ENERGY XRAY ABSORPTIOMETRY IMAGES IN THE AUCKLAND CALCIUM STUDY COHORT

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Background: Osteoarthritis (OA) and osteoporosis are the two most common musculoskeletal diseases in the aging population and its relationship has long been debated. Dual energy Xray absorptiometry (DXA) scanners are used to assess osteoporosis, but recently, DXA images have also been shown to adequately assess OA. The purpose of this study was to assess the prevalence and incidence of hip OA (HOA) based on DXA images in a large study cohort from New Zealand.
Methods: DXA scans of the hip (Lunar Expert, GE) taken at 30 month intervals over 5 years from postmenopausal women participating the Auckland Calcium Study were scored for the presence of HOA using Kellgren Lawrence grades (KL). Images from the each subject were visualised simultaneously, and the reader blinded to the scan order. Progression was defined as follows: KL change of ≥1 grade, or if the change detected was ≤1 KL grade, by correct sequential ordering of images.
Results: 1420/1471 subjects had baseline hip DXA images available of adequate quality to assess prevalence. Of those, HOA (KL≥2) was present in 8.45% at baseline. Of the 1,187 subjects who had ≥2 DXA scans, 13.5% were classified as having progressed by the study criteria. Incident new HOA was 2.3% and 4.8% for 2.5 year and 5 year follow-up respectively.
Conclusions: The prevalence and incidence of HOA determined by DXA were comparable to those published in literature for radiographs. DXA may have a role in monitoring hip osteoarthritis in studies of osteoporosis/fracture risk.
Disclosure statement: The authors have declared no conflicts of interest.

121. USING THE NATURAL HISTORY OF LOWER LIMB PAIN TO IDENTIFY NOVEL PHENOTYPES IN OSTEOARTHRITIS

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Background: It is widely accepted that osteoarthritis (OA) is a heterogeneous condition and the value of epidemiological data to identify clinically relevant phenotypes, to improve both understanding of aetiology and management, has been recently highlighted [1]. A recent study of short-term consistency of knee pain has revealed patient subgroups with different characteristics [2], but little research has focused on long-term patterns of both hip and knee pain.The aim of this study was describe to the different phenotypes of hip and knee pain over 8 years, in a population-based cohort of patients reporting lower limb pain at the point of screening.
Methods: 1275 subjects (772 females, age 35-85yrs at baseline) reporting lower limb pain on initial screening, with follow-up pain data at 8 years were selected from the SASH cohort, a population-based study of 28 080 people randomly selected from 40 general practices in the south-west of England. The patterns of joint involvement taking account of baseline, follow-up and overall change over time were described.
Results: Frequencies of static patterns of pain were (baseline n (%), follow-up n (%)): none (527(41), 310(24%)), unilateral knee (250(20), 140(11)), unilateral hip (136(11), 73(6)), contralateral hip and knee (11(1), 26(2)), bilateral knee (193(15), 202(16)), bilateral hip (33(3), 55(4)), ipsilateral hip and knee (53(4), 130(10)), three joints (48(4), 134(11)), four joints (24(2), 205(16)). The change in patterns of pain over time are summarised in Table 1.
Conclusions: This is the first study to describe long-term longitudinal change in hip and knee pain. Several potential pain phenotypes have emerged and may be associated with different predictors, which would aid understanding of aetiology and inform management. Further validation is needed in other cohorts.
Disclosure statement: The authors have declared no conflicts of interest.

TABLE 1. Change in pain pattern over 8 years

Pain pattern	N (%)
No joint pain	154 (13)
Stable unilateral or bilateral knee pain	113 (9)
Unilateral knee or hip pain becoming bilateral	63 (5)
New onset unilateral hip or knee pain	98 (8)
New onset bilateral hip or knee pain	92 (7)
Unilateral hip or knee pain	100 (8)
Four painful joints with none or single joint involvement at baseline	110 (9)
Resolved unilateral or bilateral hip or knee pain	101 (8)
Other pattern of reduced joint involvement	113 (9)
Other stable number of painful joints	97 (8)
Other increasing number of painful joints	234 (19)

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